

Xplor



FLOAT *your* **BOAT**
DOWN AN OZARK STREAM

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ON THE COVER

Two Young River Rafter

A soggy American mink slinks onto a sun-warmed rock after taking a dip at Forest Park in St. Louis. Mink are all-terrain predators, hunting rodents and other prey both on land and in water.

STRANGE BUT TRUE

Your guide to all the
UNUSUAL, UNIQUE,
AND **UNBELIEVABLE**
stuff that goes on in nature

The next time you're having a bad day, consider the **CICADA**. As young cicadas tunnel out of the ground, some become infected by a fungus in the soil. When the bugs shed their shells to become adults, the fungus makes their bottoms fall off.



Male **BEES** are all buzz and no bite. Although a few species of boy bees have sharp spines on their backsides, only female bees have stingers that can inject painful venom.



Dance for your life! To win a female's heart, a male **JUMPING SPIDER** performs an elaborate dance, waving his legs in the air and shuffling his body from side to side. If the female isn't impressed, she might eat her date for dinner.



No bones about it, a **TURTLE'S** shell is part of its skeleton. The backbone and extra-long ribs make up the shell's underlying framework, and bony plates called scutes form the hard outer wall.



Each time a **SNAKE** flicks out its forked tongue, odors stick to it. Sensitive organs inside the snake's mouth detect which side of the tongue collected the stronger scent. This helps a snake pinpoint where a smell is coming from.



PSEUDOSCORPIONS

(sade-oh-skor-pee-unz) are creatures with pincers like a scorpion and a body like a tick. The tiny pest-eating predators often enter houses by hitching rides on houseflies or other winged insects. Yee-hawww!



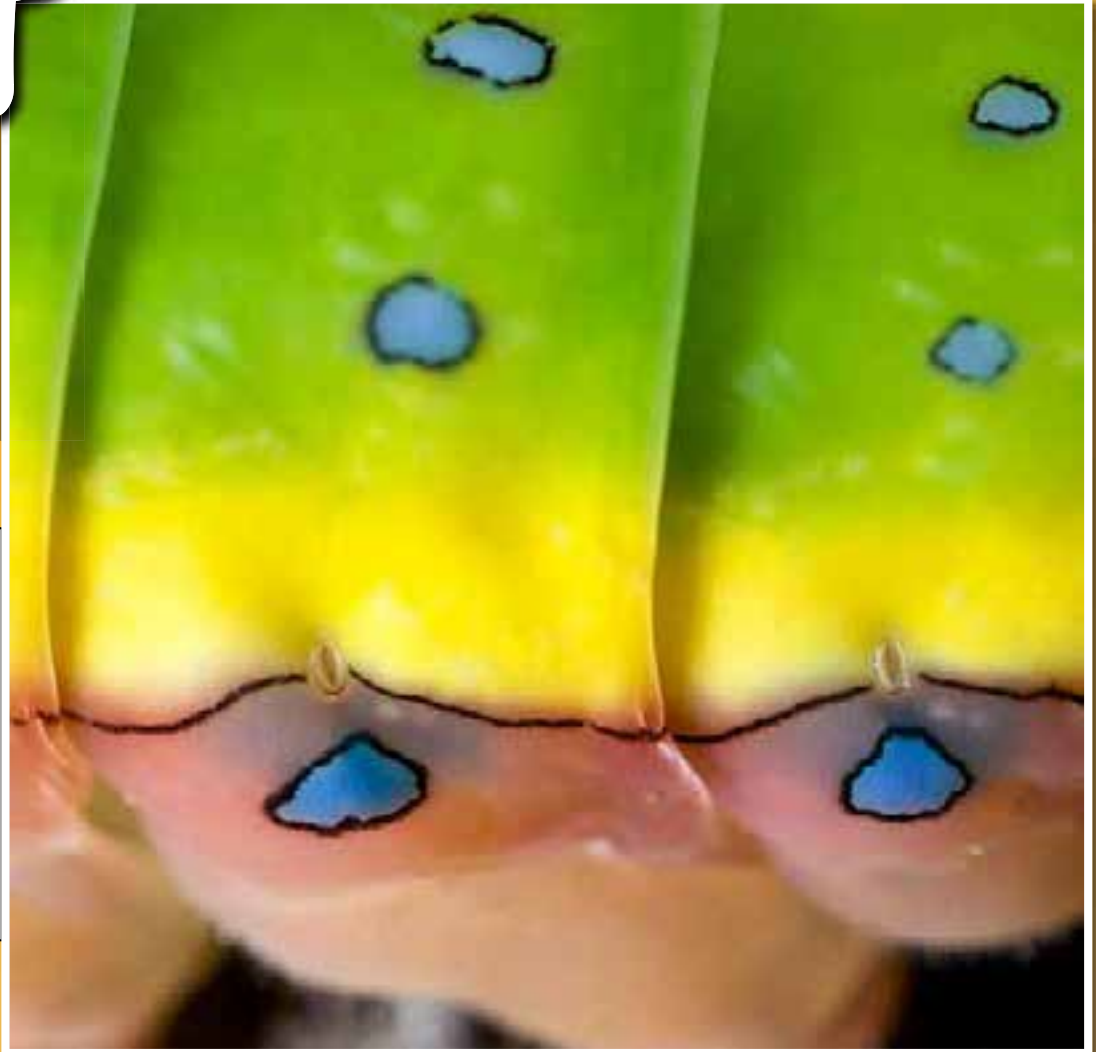
BROWN THRASHERS may sing over 1,000 different kinds of songs, including imitations of other birds. They've been known to belt out ballads borrowed from tufted titmice, American robins, and whip-poor-wills.



WHAT IS IT?

DON'T KNOW? Jump to Page 21 to find out.

- 1 My appearance is quite a surprise.
- 2 I look like scat that fell from the skies.
- 3 As I grow, I change my disguise.
- 4 I get spots that look like snake eyes.



TWO TRUTHS, ONE LIE

Which fascinating fact is actually a fib?

Answer on Page 21



- 1 River otters are fabulously furry. Each square inch of an otter's body is covered with over 300,000 hairs.
- 2 To catch fish and other aquatic creatures, a river otter can stay underwater for up to 10 minutes.
- 3 When angry or afraid, a river otter can let loose a hair-raising scream that can be heard over a mile away.

HOW TO

MAKE CATFISH BAIT

Every inch of a catfish's slippery skin, from its whiskery barbels to the tip of its tail, is covered with taste buds. But this *sense*-sational skin isn't made to savor flavors. It helps a catfish nab snacks in dark, murky water.

Store-bought catfish bait is full of stinky stuff — like dead fish, smelly cheese, or blood — so catfish can find it in murky water. It works really well, but it smells REALLY bad! If you want to use a bait that isn't so stinky, try this instead.

HERE'S WHAT YOU NEED

- 1 cup of cornmeal
- 1 cup of flour
- 1 can of cream soda or 2 cups of a fruit-flavored drink
- 3 teaspoons of vanilla extract or garlic powder
- Large mixing bowl
- Measuring cups and spoons
- Zip-top plastic bags
- Treble hooks (size 4 or 6)



HERE'S WHAT YOU DO

- 1** Mix the cornmeal and flour together in a bowl.



- 2** Add a can of cream soda (or 2 cups of fruit drink) and the vanilla extract (or garlic powder) to the bowl. Stir everything together to make a wet dough.



- 3** Dust a countertop with flour and dump the dough on top. Knead the dough — as if you were making bread — for 10 to 15 minutes, until the dough is stretchy and isn't too sticky. You may need to add more flour if the dough seems too wet.



- 4** Stow the dough in a zip-top bag or airtight container.

- 5** When you're ready to fish, roll a bit of dough into a ball the size of a grape. Press a treble hook into the dough and mold the dough around the hook so none of the barbs are showing.



- 6** Tie the treble hook onto your fishing line and toss it into catfish-infested waters. Good luck!



BERRIED Treasure



Forget about desert islands and pirate chests filled with gold. A much sweeter treasure is ripe for the taking, right here in Missouri.

Blackberries, raspberries, and mulberries reach the peak of perfection from June through August. These yummy wild treats are found across Missouri in a variety of habitats. There's probably a patch growing nearby just waiting for you to find them!



Blackberries

Prepare for Picking

- ✓ Summer can be sweltering, so you might want to time your berry picking for early morning or early evening when it's slightly cooler and the sun isn't so harsh.
- ✓ Wear sunscreen and a shady hat to keep your skin from getting sunburned.
- ✓ Blackberries and raspberries don't give up their fruits without a fight. The brambles are covered with sharp, prickly thorns. Armor up with long pants and a long-sleeved shirt to avoid becoming a human pincushion.
- ✓ Chiggers and ticks hang out in the same habitat as berry bushes. Before heading out, spray yourself with insect repellent to keep the bloodsuckers at bay.
- ✓ Bring water to drink, bandages for scratches, and a bucket to hold your bounty of berries.
- ✓ Blackberries, raspberries, and mulberries are safe to eat and easy to identify. But some berries will make you sick if you eat them. Never eat a berry you aren't sure about.





BLACKBERRIES

WHERE Dozens of different kinds of blackberries grow throughout Missouri. Look for them in sunlit habitats such as along the edges of woods, pastures, prairies, and fencerows.

WHAT Blackberries form thickets of brambles 6 to 8 feet tall. In May and June, the brambles are covered with clusters of white, five-petaled flowers visited by bumblebees and other buzzy insects. The leaves have three to five leaflets with “teeth” around their edges and are green on both the top and bottom sides.

WHEN Glossy, purple-black berries reach peak sweetness in July. Red berries aren’t ripe yet. Don’t pick them!



Wild for Berries

Humans aren’t the only animals with a sweet tooth. Berries offer healthy energy for lots of wild critters, too.

American robins, cedar waxwings, and many other birds feast on mulberries when they ripen. Loud, joyful tweeting can be a clue that a mulberry tree is nearby. Fox and gray squirrels savor mulberries too. You can tell when one has been eating berries because its snout will be stained purple.



Cedar waxwing

Wild turkeys love to gobble blackberries and raspberries. Even though they don’t have fingers, they’re surprisingly skillful at avoiding thorns when they pluck off berries with their beaks! White-tailed deer, raccoons, opossums, and even box turtles also enjoy blackberries and raspberries.



Wild turkey

As you’re picking, you may hear the hum of bumblebees gathering nectar and pollen. Not to worry! These hardworking flower farmers won’t hurt you, and they ensure that pollen gets passed from flower to flower. Without bees and other pollinators, we wouldn’t have berries to eat.



Box turtle



Bumblebee

BLACK RASPBERRIES



WHERE Black raspberries are found throughout Missouri except in the Bootheel. Look for them in sun-dappled forests, along bluffs, and at the edges of woods.

WHAT Like blackberries, raspberries form thorny thickets. The brambles grow a little shorter than blackberries and have a white coating that rubs off when touched. The leaves usually have three toothy “leaflets” but sometimes five. The upper surface of each leaflet is green, but the underside is white. Black raspberry fruits look nearly identical to blackberries, but the center of a picked raspberry is hollow like a thimble while a blackberry’s center is solid.

WHEN Black raspberries reach their peak from mid-June to early July. Unlike their red, store-bought cousins, black raspberries are purplish-black when they’re fully ripe.

RED MULBERRIES

WHERE Red mulberries grow statewide at the edges of woods, in low-lying areas, and on damp hillsides. They’re also found in yards and parks.

WHAT Look for a tree with a short trunk and wide-reaching limbs that form a rounded crown, like a stalk of broccoli. The tree can reach up to 60 feet tall — leave the berries at the top for the birds! Heart-shaped leaves are edged by tiny teeth, and some leaves may have lobes. When plucked from the tree, the leaves bleed a milky sap. A similar tree, the nonnative white mulberry, has smaller, shinier leaves with lots of lobes.

WHEN Red mulberries ripen from June to August, reaching their peak in early July. The berries are red and sour at first then turn purplish-black when ripe and sweet.





Somersault Cobbler

What should you do with all the berries you've picked? Make a cobbler, of course! With this recipe, you sprinkle the berries on top of the cobbler, and they somersault under the batter as it bakes. You'll flip, too, when you taste how yummy it is.

Here's What You Need

- 1 cup sugar (divided in half)
- $\frac{1}{4}$ cup shortening
- $\frac{1}{2}$ cup milk
- $\frac{3}{4}$ cup flour
- 1 teaspoon baking powder
- $\frac{1}{4}$ teaspoon salt
- 3 cups fresh blackberries, raspberries, or mulberries
- 2 tablespoons butter
- $\frac{3}{4}$ cup water

Here's What You Do

- 1 Preheat the oven to 400 degrees. In a mixing bowl, combine half a cup of sugar and the shortening. Use a hand mixer to blend it until it's creamy.
- 2 Mix in the milk, flour, baking powder, and salt.
- 3 Grease a square 8-inch cake pan and pour in the batter.
- 4 Top the batter with berries. Use a butter knife (or your fingers) to flake bits of butter on top of the berries. Sprinkle the remaining sugar over the whole thing.
- 5 Grab a grown-up to help you. Bring the water to a boil and carefully pour it over the berries and batter.
- 6 Bake for about 30 minutes until the top of the cobbler turns golden brown.

Berry Ice Cream

If you're too hot to eat cobbler (really?!) after a steamy afternoon picking berries, try cooling off with a bowl of ice cream.

In a food processor, blend 2 cups of berries, 1 cup of sugar, and half a cup of water. Pour the mixture through a sieve into a glass bowl. Mix in half a cup of heavy cream. Chill the mixture in your refrigerator for an hour, and then pour it into an ice cream maker. Soon you'll have a *berry* cold and *berry* yummy treat!



Paint with Berries

If you find more berries than you can eat — we should all be so lucky! — turn some of them into paint. Put half a cup of berries into a bowl and use a fork to smooch them into mush. Stir in $\frac{1}{4}$ cup of water and pour the mixture through a sieve to strain out seeds. Blackberries and raspberries make dark purple paint; mulberries make pinkish-purple. The paint works best on watercolor paper, but it will stain nearly anything it comes in contact with, including fingers, clothes, and tablecloths. Be careful!



EASTERN HOG-NOSED SNAKE



SHOVEL SNOUT

A hog-nosed snake uses its flat, upturned snout to dig through loose soil while searching for toads to eat.

TOUGHER THAN TOXINS

Toads secrete poison from their skin that can kill or sicken predators. Hog-nosed snakes are immune to toad toxin and happily munch the hapless amphibians.

HISSEY BUT HARMLESS

When threatened, a harmless hog-nosed snake hisses loudly and flattens its head and neck like a cobra.



CAP OF COILS

While playing dead, a hog-nosed snake often hides its head under the coils of its tail for protection.

FAKEY SNAKE

If the cobra act fails to frighten away a predator, the hog-nose rolls onto its back, flops out its tongue, and pretends to be dead.

Streamin' through Summer

When summer's sizzle makes you fizzle, it's time to seek a creek. Come along with this fun-loving crew of riffle rafters as they explore the cool, wild waters of the Niangua River.

Gear Up!

Outfitters will drop you off at the river and pick you up downstream. They'll also provide boats — rafts, canoes, or kayaks — paddles, and life jackets. Here are a few other things you should bring.

- ✓ Sunscreen, a hat, and sunglasses
- ✓ Bathing suit or swim trunks
- ✓ Water shoes
- ✓ Cooler filled with snacks and drinks
- ✓ Rope or bungee cords
- ✓ Waterproof bags
- ✓ Dry clothes for the trip home





At the put-in, it might take a little while to get things stowed away in the rafts. But don't worry, you'll soon be going with the flow. Bon voyage!

Totally Tubular

On a gentle river, lounging in a tube as you drift downstream is relaxing and refreshing. You can rent tubes from an outfitter or bring your own. Friends can tie their tubes together to form a giant raft.



Bash That Trash!

Outfitters usually provide trash bags, but it doesn't hurt to pack a few extra. If you spot litter along the bank, make sure to bag it up!





Take a Break on the Bank

A lot of the fun on a float trip comes from exploring gravel bars and sandy banks along the way. You never know what kinds of critters or buried treasures you might find!



Tiny critters cling to the undersides of rocks. Look for snails, baby mayflies, and pebble houses built by caddisflies.





Northern map turtle

When you pick up a turtle or other critter for a closer look, be gentle and return it where you found it when you're done.



No claws for alarm. If you grab a crayfish by its back, it can't pinch you.



Ozark crayfish





Spring Freeze

Many of Missouri's Ozark streams are fed by springs. When water gurgles to the surface from deep underground it's ice cold. Swimming near a spring can take your breath away! Some people find it thrilling. Others find it painful.

Paddling Pointers

- ✓ To hold a paddle correctly, place one hand on the grip at the end of the paddle, and wrap your other hand around the middle of the paddle's shaft.
- ✓ Paddlers in the back of the boat can stick the blade of a paddle vertically in the water and use it as a rudder to turn the raft left or right.
- ✓ Teamwork makes a raft work. Paddlers on both sides need to work together to navigate around rocks and logs.



The best way to beat summer's heat is splashing in a cool, clean stream. Did someone say, "water fight"?



Go Float!

Toss a rock almost anywhere in Missouri, and it will land in a stream. But not all of them are fun — or even possible — to float. For a guide to our finest floatable rivers, borrow a copy of *A Paddler's Guide to Missouri* at your local library, buy it at a nature center, or order it online at mdcnatureshop.com.



Damselfly



XPLOR MORE

ANIMAL OLYMPICS



In July, the world's best athletes will gather in Paris, France, to compete in the Summer Olympics. But what if the Games gave other members of the animal kingdom a chance to compete? Which wild critters would be crowned champions?



BLACK BEAR



WHITE-TAILED DEER



COYOTE

100-METER DASH

In this battle of Missouri's fastest and furriest who's the swiftest sprinter on four legs?

INSTRUCTIONS

Can you figure out who will win each event? Under the animal that finishes first, write a "G" for "gold." Under the animal that finishes second, write an "S" for "silver." And under the animal that finishes third, write a "B" for "bronze."

1st Place = Gold = G

2nd Place = Silver = S

3rd Place = Bronze = B



BOBOLINK



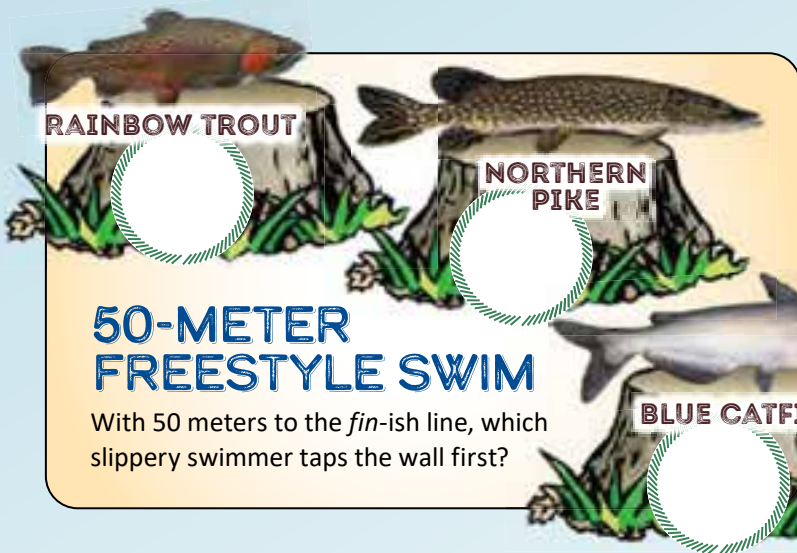
HUDSONIAN
GODWIT



PECTORAL
SANDPIPER

MARATHON

Twenty-six miles is just a warmup for these marathon migrators. Which bird travels the farthest each year?



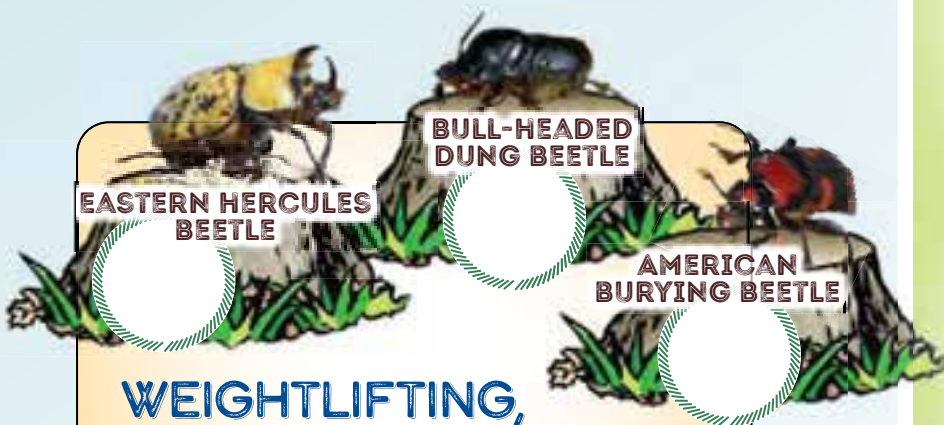
RAINBOW TROUT

NORTHERN PIKE

BLUE CATFISH

50-METER FREESTYLE SWIM

With 50 meters to the *fin*-ish line, which slippery swimmer taps the wall first?



EASTERN HERCULES BEETLE

BULL-HEADED DUNG BEETLE

AMERICAN BURYING BEETLE

WEIGHTLIFTING, LIGHTWEIGHT DIVISION

Despite their small size, these burly bugs are super strong. But who's the strongest?



EASTERN COTTONTAIL

AMERICAN BULLFROG

MOUNTAIN LION

LONG JUMP

Sproing! Which critter will take leaping to new lengths and be crowned king of spring?

Answer: Unfortunately, this isn't much of a competition. A mountain lion can leap up to 40 feet, making it Missouri's bounciest and pounciest predator. A cottontail hops up to 15 feet — a breathtaking bound for a bunny — and finishes second. And the bullfrog is *unhopped* with its effort, managing to jump only 8 feet. G - Mountain lion, S - Eastern cottontail, B - American bullfrog.

LONG JUMP

Answer: Don't let its unfortunate name fool you. The bull-headed dung beetle can lift more than 1,000 times its own weight. That's a lot of dung! Burying beetles eat dead animals and can carry critters that weigh 200 times more than they do. Hercules beetles can lift over 100 times their weight. G - Bull-headed dung beetle, S - American burying beetle, B - Hercules beetle.

WEIGHTLIFTING, LIGHTWEIGHT DIVISION

Answer: This one is tricky. As ambush predators, northern pike are known for their blinding bursts of speed. But they can't maintain their pace for more than a few meters. Over longer distances, the trout and the catfish are both swifter swimmers. G - Rainbow trout, S - Blue catfish, B - Northern pike.

50-METER FREESTYLE SWIM

Answer: Hudsonian godwits chase summer from one side of the Earth to the other, migrating up to 20,000 miles *each year!* Pectoral sandpipers and bobolinks don't fly quite so far, but they still log an astounding 18,000 and 13,000 miles, respectively. G - Hudsonian godwit, S - Pectoral sandpiper, B - Bobolink.

MARATHON

Answer: The cagey coyote crushes the competition by running at a howlingly fast 45 miles per hour. The deer dashes across the finish line in second place, reaching speeds of 35 to 40 miles per hour. And despite being the chubbiest competitor, the bear runs a respectable 30 miles per hour — still faster than the best human sprinter. G - Coyote, S - White-tailed deer, B - Black bear.

100-METER DASH

ANSWERS

GET OUT!

FUN THINGS TO DO
AND GREAT PLACES
TO DISCOVER NATURE



When the time's right, baby **CICADAS** (called nymphs) tunnel up from underground, their outer shells split open, and winged adults wiggle out. Search tree trunks, deck rails, and fence posts for the crunchy exoskeletons the nymphs leave behind.

AMERICAN GOLDFINCHES

NEST much later than most birds. They wait for certain plants to produce silky seeds so they can use them to line their nests. Watch for the sunshiny birds gathering fluff from milkweeds, thistles, and dandelions throughout July.



August is a good time to search for **MONARCH CATERpillARS** on milkweed leaves. For tips on how to raise a caterpillar at home and watch it change into a brilliant orange butterfly, flutter over to monarchwatch.org.



Fox squirrel

In mid-summer, **FOX AND GRAY SQUIRRELS** catch the love bug. Look for the bushy-tailed nut munchers chasing each other up, down, and around trees. Mama squirrels have their second litters of the year in July and August.



Gray squirrel

Look for the "pink cattail" flowers of **BLAZING STAR** on prairies and roadsides across the state. Missouri has nine kinds of blazing stars, and at least one species is abloom from July to October.



Prairie blazing star



Looking for more ways to have fun outside? Find out about Discover Nature programs in your area at mdc.mo.gov/events.



WHAT IS IT?

— FROM PAGE 3 —



SPICEBUSH SWALLOWTAIL CATERPILLAR

Spicebush swallowtail caterpillars are masters of disguise. Baby caterpillars look like bird droppings. This keeps predators from eating them. During the day, they hide in tents made of leaves. At night, they munch on spicebush and sassafras. As they grow, they turn green and develop large spots on their bodies that look like the eyes of a snake. After forming a chrysalis, the bug-eyed caterpillars emerge as beautiful **butterflies**.



GO FIND IT!



Cut out this critter card and take it with you outside.
How many of the things on the card can you find?

COMMON FIVE-LINED SKINK



COLORFUL KIDDOS

A young skink is shiny black with five yellow stripes and a bright blue tail.

DULL ADULTS

As it grows up, a skink's body turns brown or tan, and its bright stripes and tail become less obvious.

TAIL TRICKERY

When a predator grabs a skink's tail, the little lizard leaves its behind behind. While the detached tail twitches, the skink slinks to safety. A new tail grows back, but it's shorter than the original.

PROTECTIVE PARENT

Most reptiles lay eggs and leave. Mama skinks guard their eggs until they hatch.

BUG BAGGER

Skinks eat a variety of insects, spiders, snails, and smaller lizards.



JUVENILE SKINK: JEFFREY T. BRIGGLER; SKINK NEST: TOM R. JOHNSON

ONE
LIE

— FROM PAGE 3 — Answer: 2

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mdc.mo.gov/xplor.

FREE TO MISSOURI HOUSEHOLDS

GO FIND IT!

Common five-lined skinks live among rocks, under dead logs, around farm buildings, and in forests statewide. For more on this lovely lizard, scurry over to mdc.mo.gov/field-guide.

COMMON FIVE-LINED SKINK



TOM R. JOHNSON